



State of Alaska
Department of Fish and Game
Sportfish Division

Nomination Form
Anadromous Waters Catalog

M E

Region Southcentral USGS Quad(s) SEWARD B-1
 Anadromous Waters Catalog Number of Waterway 227-20-17590-2003 - 0010, 0020
 Name of Waterway Rocky Creek USGS Name Local Name
 Addition Deletion Correction Backup Information

For Office Use

Nomination #	<u>14-705</u>	<u>James J. Hasbrouck</u>	<u>10/3/2014</u>
Revision Year:	<u>2015</u>	Fisheries Scientist	Date
Revision to:	Atlas _____	<u>[Signature]</u>	<u>10/3/14</u>
	Both <u>X</u>	Habitat Operations Manager	Date
Revision Code:	<u>A-1, A-2, B-2</u>	<u>[Signature]</u>	<u>9/19/14</u>
		AWC Project Biologist	Date
		<u>TA</u>	<u>10/15/14</u>
		Cartographer	Date

OBSERVATION INFORMATION

Species	Date(s) Observed	Spawning	Rearing	Present	Anadromous
coho salmon	09/26/1995	✓			✓
coho salmon	06/13/1990		✓		✓
cutthroat trout	06/13/1990			✓	

IMPORTANT: Provide all supporting documentation that this water body is important for the spawning, rearing or migration of anadromous fish, including: number of fish and life stages observed; sampling methods, sampling duration and area sampled; copies of field notes; etc. Attach a copy of a map showing location of mouth and observed upper extent of each species, as well as other information such as: specific stream reaches observed as spawning or rearing habitat; locations, types, and heights of any barriers; etc.

Comments:
 Asked to nominate stream by Megan Marie, ADF&G Habitat. Sorry if repeat, was adding docs last Friday, FS database shut down. Two lakes connected by FS fish ladder. 59 spawning coho 9/95. 75, 100 juv coho lower, upper lake 6/90. 14, 2 cutt, lower, upper 6/90. See attachments. While these observations are old, cutt and coho still present in upper lake. Captured both species while fly fishing in upper lake 6/11. Observed rearing coho in stream between 2 lakes 6/11. Water clear, fish not in hand, but positive ID. Upper reach lat/long is for spawning coho. Report says water murky, but time of year, size of fish, and ability to see fish digging redds in shallow water made ID positive (personal observation).
 Coordinates (Lat,Long): Upper(-147.097,-60.323) Lower(-147.123,-60.327)

2011

Name of Observer (please print): Ken Hodges
 Signature: 199.131.86.206 (Web Nomination) Date: 09/15/2014
 Agency: _____
 Address: POB 280 POB 2501
Cordova, AK 99574

This certifies that in my best professional judgment and belief the above information is evidence that this waterbody should be included in or deleted from the Anadromous Waters Catalog.

Signature of Area Biologist: _____ Date: _____ Revision 02/08
 Name of Area Biologist (please print): _____

Extend 227-20-17590-2003 w/ coho salmon rearing & present, etc
 Add coho salmon present to -2003-0010, add new lake
 -2003-0020 w/ coho salmon rearing, present

ROCKY BAY MAINTENANCE MONITORING AND EVALUATION TRIP

Cordova Ranger District
Chugach National Forest
June 12-14, 1990

Introduction

On June 12-14, Kedric Nutt and Amy Hedlund traveled to Rocky Bay on Montague Island to inspect a steppass structure. The steppass is located between two lakes on Rocky Creek approximately 1.5 miles east of the mouth of the creek at Rocky Bay. It was constructed in 1983 to provide access for salmon (mainly coho) to a significant amount of spawning and rearing habitat in the upper lake. Fish movement was restricted by an impassable waterfall created by the 1964 earthquake.

The objectives of this trip included sampling the fish populations below and above the steppass to monitor the effectiveness of the structure. In addition, the crew was to inspect the structure for maintenance needs and perform any minor maintenance. Major maintenance needs would be noted for future work.

Methods

The fish crew was transported to Rocky Bay by float plane on June 12 and set up camp at the Forest Service administration cabin. All gear was packed in to the sampling sites on a 1.5 mile hike with essentially no real trails. Aerial photographs aided greatly in reaching work sites. Five (5) small mesh wire basket traps were set in each lake. Traps were baited with salmon eggs and placed in shallow water (2-3 feet) near shore. The lower and upper lakes were trapped at approximately 1100 and 1230, respectively. Traps in the upper lake were retrieved at 1000 and the lower lake at 0200 for total fishing time of 21 and 27 hours, respectively.

To reduce handling time and stress, fish were kept in traps in the water until they could be worked up. A batch of fish were anesthetized in a weak solution of MS-222 to ease handling. All fish were identified to species and counted. Fork lengths (mm) were taken with a small measuring board. Adverse weather conditions limited the use of a triple beam balance scale and weights were not taken. Weights were calculated later using fork length-weight regression equations.

Scale samples were taken from 10 salmon and 2 cutthroat in the lower lake and 9 salmon and 1 each cutthroat and holly varden in the upper lake. Scales were scraped off with a pocket knife from above the lateral line and slightly in front of the dorsal fin. Up to five (5) samples were placed (in patches) on microscope slides with a second slide pressed and taped onto the first. Samples were identified by lengths of fish written on the slide corresponding to the arrangement of the scale groups on the slide. After data gathering, fish were revived in a bucket of pure lake water. The completely recovered fish were then released into the lake.

Results

Weather conditions were variable over the length of the trip. June 12 (the day traps were set) was clear, sunny and calm. Air temperature was 20-25 C and water temperature was 17 C (in both lakes). June 13 and 14, however, were

loudly and cool with intermittent storms carrying moderate rains and east winds to 15 mph. The air temperature was 1 C.

Fish trapping was successful in both lakes. A total of 122 fish from the upper lake and 92 from the lower lake was collected including 100 and 75 coho salmon from the upper and lower lakes, respectively. Fish lengths and numbers, by species, are presented in Tables 1 and 2. Although several cutthroat trout and dolly varden were caught in each lake, coho salmon were the dominant fish caught.

Length-frequency distributions (Figures 1 and 2) were used in conjunction with scale aging to define age classes among the salmon. Distributions from both lakes show peaks at 30-50 mm and 75-100 mm. The peak for the smaller fish was distinctive in the upper lake due to a large sample size. Similarly, the peak for the larger fish in the lower pond was well defined. These figures suggest at least two age classes in both Rocky Creek lakes. Scale aging showed that there were 2 age classes and agreed (?) with length-frequency data. The 1st age class covered 30 to 50 mm and the 2nd age class covered 75 to 100 mm.

The age of the various sizes of salmon in these lakes indicates the quality of spawning and especially rearing habitat present. For coho salmon, the data indicate these lakes are (high/moderate/low) quality habitat. Lengths of 30-50 mm for age (0,1) fish represents (good/average/poor) growth for coho salmon. Lengths of 75-100 mm for age (1,2) fish also represents (good/average/poor) growth.

The data collected on this trip suggest that the steep pass structure is functioning according to design. A significant number of coho salmon smolt were found in the upper lake (above the steep pass). Although adult salmon have not been observed moving up the pass, it appears a substantial number of coho spawners have been reaching the upper lake for at least two years.

Results of structure inspection revealed no major maintenance needs. Bolts on all the crossties were checked and tightened as needed. All bolts on the aluminum crossties were tight, but many on the wooden crossties were loose. The majority of the wooden crossties were beginning to rot and break up. Bolts on the wooden crossties ate into the wood when tightened. There was no debris (rocks, wood) in the pass when checked for cleaning. Overall, the structure was in good shape and was functioning well.

Recommendations

Future work concerning the effectiveness of the steep pass should include observing behavior of adult fish at the structure during fall spawning runs. Another trip should be made during late summer to observe the ability of spawning coho salmon to travel up the pass.

Future maintenance work should focus on the wooden crossties. All wooden crossties may need replacement before the next fall.

TABLE 1. Trap results from upper lake, Rocky Creek, June 13, 1990.

Fork		Fork		Fork		Fork	
Species	Length	Species	Length	Species	Length	Species	Length
SS	36	SS	36	SS	42	SS	75
SS	32	SS	37	SS	35	SS	46
SS	44	SS	35	SS	32	*SS	72
SS	33	SS	39	SS	40	*SS	75
SS	33	SS	32	SS	33	*SS	88
SS	40	SS	33	SS	31	SS	46
SS	34	SS	30	SS	34	SS	80
SS	39	SS	33	SS	32	DV	105
SS	36	SS	35	SS	34	*DV	145
SS	35	SS	34	SS	33	DV	90
SS	33	SS	32	SS	32	DV	114
SS	33	SS	36	SS	36	DV	105
SS	36	SS	34	SS	37	DV	95
SS	34	SS	34	SS	31	DV	110
SS	34	SS	32	SS	34	DV	85
SS	32	SS	40	SS	34	DV	84
*SS	64	SS	29	SS	41	DV	46
SS	42	SS	34	SS	34	DV	97
SS	53	SS	39	SS	38	DV	115
SS	34	SS	34	SS	35	DV	95
SS	33	SS	35	SS	32	DV	86
SS	44	SS	36	SS	36	DV	93
SS	38	SS	34	SS	34	DV	110
SS	34	SS	39	*SS	94	DV	112
SS	34	SS	34	SS	105	DV	109
SS	32	SS	36	*SS	75	DV	89
SS	33	SS	34	SS	110	DV	105
SS	36	SS	34	*SS	100	*CT	154
SS	38	SS	38	SS	80	CT	154
SS	31	SS	36	SS	45		
*SS	79	SS	60	SS	54		

Scales taken for this fish.

$N_{tot} = 122$ $X_{ss}(\text{age } 0) =$ $X_{ss}(\text{age } 1+) =$
 $N_{ss} = 100$ $SD_x =$ $SD_x =$
 $N_{dv} = 20$
 $N_{ct} = 2$

Table 2. Trap results from lower lake, Rocky Creek, June 13, 1990.

Fork Species	Fork Length						
*SS	89	SS	82	SS	90	CT	121
*SS	95	SS	85	SS	88	CT	118
*SS	94	SS	86	SS	75	CT	115
*SS	89	SS	76	SS	32	CT	120
*SS	95	SS	90	SS	84	*CT	145
*SS	99	SS	80	SS	85	CT	115
*SS	94	SS	84	SS	74	*CT	158
*SS	96	SS	80	SS	74	CT	138
*SS	84	SS	42	SS	92	CT	149
*SS	85	SS	43	SS	85	CT	150
*SS	76	SS	45	SS	68	CT	155
SS	79	SS	43	SS	79	CT	124
SS	82	SS	74	SS	85	CT	124
SS	78	SS	92	SS	92	CT	145
SS	90	SS	85	SS	79	DV	115
SS	82	SS	78	SS	72	DV	92
SS	75	SS	80	SS	80	DV	102
SS	79	SS	76	SS	66		
SS	78	SS	84	SS	84		
SS	80	SS	87	SS	92		
SS	71	SS	75	SS	83		
SS	82	SS	84	SS	98		
SS	71	SS	86	SS	63		
SS	70	SS	76	SS	40		
SS	88	SS	94	SS	62		

Scales taken for this fish.

$\bar{X}_{tot} = 92$ $\bar{X}_{ss} (\text{age ?}) =$ $\bar{X}_{ss} (\text{age ?}) =$
 $\bar{X}_{ss} = 75$ $SD_x =$ $SD_x =$
 $\bar{X}_{ct} = 14$
 $\bar{X}_{dv} = 3$

Results include 180 sticklebacks.

1995 FISHWAY MAINTENANCE & MONITORING EVALUATION

Merlyn Schelske
Fisheries Technician

This report is an evaluation of maintenance and monitoring of the Cordova Ranger District fishways and Prince William Sound structures.

The report will discuss the four fishways located on the Cordova Ranger District. It will list the number of trips to each site and the maintenance done. The escapement at each fishway will also be noted along with the species and the method of observation.

First location is the Olsen Bay fishway.

The Olsen Bay fishway is located in Port Gravina on ADF&G Stream # 52 and is 35 miles north of Cordova. The fishway was constructed in 1973 to pass primarily pink salmon. In recent years Chum Salmon have also been observed using the fishway.

In 1995 three trips were made to the site. On June 13, 1995 a visit was made by Dave Schmid and Merlyn Schelske. The site visit included a walk up the stream to inspect the fishway. Water level was normal and was flowing through both sections of the fishway. The fishway was closed down with the use of a board placed in front of the fishway. Several pieces of logs and rocks were removed at this time. The fishway was considered in good shape.

Visual Escapement: On the hike up the stream from salt water no fish were observed. Fish were observed jumping in the estuary and bay adjoining the stream.

A second trip was made on July 17, 1995 personnel included David Saiget, Merlyn Schelske, and two volunteers Kim and Theresa Potter.

Upon anchoring the boat in the bay numerous fish could be seen jumping about the bay and 20 to 30 eagles seen along the beach. A brown bear was also seen existing the area as we entered the bay.

Escapement was 667 Chum Salmon below the fishway and 0 above.
9,811 Pink Salmon below the fishway and 345 above.

In some pools the Pink Salmon were so numerous that one could not see the bottom of the pools and it was just a massing of moving fish. In these situations a visual estimate was made upon our best judgement.

Aerial surveys were flown by Alaska Department of Fish and Game in conjunction with their Chum and Pink salmon escapement in Prince William Sound. These are the dates and numbers of fish sighted in the stream and do not differentiate between above and below the fishway: 07/01/95-1000 pink 100 chum

07/06/95-3500 pink 600 chum
07/12/95-5800 pink 950 chum
07/19/95-3000 pink 4000 chum
07/24/95-2000 pink 2000 chum
08/01/95-3000 pink 1000 chum
08/08/95-2800 pink 2000 chum
08/14/95-7500 pink
08/19/95-20000 pink
08/26/95-1100 pink

Fishway inspection: The fishway was flowing one half to three quarters with a lot of water being diverted around the fishway. At this time it was observed that even though there was surplus water the fishway was not flowing full. It was determined that some down cutting had occurred around the fishway and also on a secondary channel. A solution would be to place a log structure to direct water towards the entrance of the fishway and ensure that it is flowing fully.

Numerous fish were trying to get up the area where water was flowing over the water falls. This in itself is no problem but I think that if the fishway was flowing fully it may encourage more fish to go towards the larger water source. This being the fishway. Next years plans will include further evaluation of this situation and possibly construction of a structure.

Canoe Pass Fishway

Canoe Pass Fishway is located on Hawkins Island in Canoe Pass. This fishway was constructed in 1980 primarily for the introduction of anadromous salmonids into a series of lakes located above the water falls.

The fishway was visited 3 times during the 1995 season. On June 14 a visit was made by Merlyn Schelske and Dave Schmid. Water level at this time was very low and no fish were observed using the fishway. It was noted that the wooden lids on top of the fishway resting pools were in need of repairs. Measurements of the lids were taken for reconstruction of these wooden structures at a later date.

June 20, 1995 Merlyn Schelske and Kevin Buckley returned to the fishway and did reconstruction of the wooden lids. Rocks and debris were also removed from the fishway. The resting pool located on the upper part of the fishway was also cleaned out with the use of a shovel. Rock and debris had accumulated in the bottom of the resting pool to a depth of three feet. This is a very dirty and hard job to perform future design of these aluminum resting pools should take into consideration the removal of this debris.

rocks were also removed from in front of the weir at the bottom of the fishway. The weir is used to direct fish towards the outlet of the fishway. It is made of one inch metal tubing. Rocks and debris had built up over the years to form a dam against the weir, this was causing extra pressure to be exerted on the weir.

No fish were observed using the fishway at this time.

On September 11, 1995 a third visit was made to the site in conjunction with a visit to the surrounding lakes. Water level was very high as it had been raining hard for several days previously. No fish were observed using the fishway. Numerous Pink Salmon carcasses littered the inter-tidal stream leading to the fishway. A walk along side the lake and up the stream joining the two lakes didn't reveal any fish either.

Future maintenance needs for the Canoe Pass Fishway should include yearly inspections and maintenance. No major construction is projected in the near future at this site.

Future monitoring of the site. Escapement of Pink and Coho Salmon and Cutthroat Trout should be continued. A more intensive escapement and study design could be developed for Cutthroat Trout to get a better anadromous trout escapement number. Canoe Pass is one of the areas in Prince William Sound that is begin developed. There are several cabins in the bay and more planed in the future. The Cutthroat Trout fisheries is well used by recreational anglers and the impact has not been fully evaluated. A angler survey would be helpful to determine use of this area for future management decisions.

A current study is under way which compares the status of fish using the lake before the fishway was installed and after. This study is on going and results should be know in the near future.

Rocky Bay Fishway:

Rocky Bay Fishway is located on north east Montague Island in Rocky Bay. It was constructed in 1983 for anadromous salmonids to gain access to a 200 acre lake above a 4 meter falls. Salmonids have been using the fishway successfully since it was constructed. The primary salmonids using the fishway are Coho Salmon and Cutthroat Trout, Dolly Varden Char are also using the fishway. Sockeye and pink salmon success of the fishway has been very limited. The habitat conditions and particular stocks of sockeye and pink salmon may not be suited for migration above the fishway.

Rocky Bay Fishway was visited two times in 1995. On May 5, 1995 Kevin Buckley, Merlyn Schelske, and Ken Hodges assessed the site. The structure was maintained by removing small woody debris. The fishway was assessed in good condition with no construction needed. No fish were observed using the fishway at this time.

A second visit was made on September 26, 1995 by Samantha Greenwood, Merlyn Schelske, and Ken Hodges. The fishway was operating very good with no woody debris or material blocking flow. No fish were seen using the fishway. A hike was made to the other side of the lake where the main stream enters it. Fifty-nine adult Coho salmon were observed in the stream and some were actively spawning. Viewing conditions were poor due to high water and the brackish color of the water thus a substantial number of fish went uncounted. Fish were counted for approximately one half mile up stream until very few fish were observed. There is an additional lake which drains into this lake and more fish could have been there but no reconnaissance was made.

This was the first visit to this site during the fall and assured us that Coho Salmon were using the fishway and spawning in the stream leading into the lake. This fish ladder was designed for a variety of salmonids. Coho salmon seem to have had the best success. This may be due to run timing and the strength of coho salmon. The importance of a fall run of Coho Salmon to the ecology to the area should not be overlooked. One particular species which is significantly affected is the Brown Bear. Coho Salmon provide a significant increase in protein intake for bears at this time of year. The Brown Bear population has been declining in recent years on Montague Island causing the Alaska Department of Fish and Game to close the hunting of Brown Bears. In a small way the few fish that spawn above the fishway can have a significant impact on the health of Brown Bear in this eco-region.

Another important factor is the input of nutrients from Coho Salmon carcasses into streams and lakes and then utilized by Cutthroat Trout and Dolly Varden. Although this fishway was not specifically intended for Coho Salmon and the economical return for commercial fishing is low in this area. This fishway is an important factor in the overall ecological diversity of Montague Island.

Future monitoring will include escapement numbers for Sockeye Salmon and Coho Salmon. A greater monitoring effort could be developed which would look specifically at the number of Coho Salmon and the contribution to the ecological diversity of the island. An additional monitoring study could be implemented to look at the Cutthroat Trout and Coho Salmon interaction.

The fishway structure itself is in good condition and no foreseeable reconstruction is expected in the near future.

Boswell Bay Fishway:

The Boswell Bay Fishway is located on Henchinbrook Island in Boswell Bay. This structure is the largest fishway located on the Cordova Ranger District. It was constructed in 1974. In 1994 a significant reconstruction was done on the fishway with the aid of a volunteer group called Rollie International. The fishway was primarily constructed to allow better access to Fish Lake for Sockeye Salmon.

Two visits were made to this site the first being on May 17, 1995 by Merlyn Schelske and Dave Schmid. Water was very high at this time and it was hard to see some areas that were reconstructed and how they did over the winter. There were no problems noted and the fish pass looked good over all.

The Second visit was made on June 18 by Kevin Buckley and Merlyn Schelske. A report from Alaska Department of Fish and Game made us aware that fish were sighted in the bay outside the creek mouth leading to the fishway. Access was via walking from the stream mouth up to the fishway. Sockeye Salmon were observed jumping in the saltwater bay outside the creek mouth. No adult fish were observed as we walked up the stream to the fishway. Numerous smolts were observed in every pool along the stream. Fish believed to be cutthroat trout were observed jumping in the inlet to the first lake.

Water conditions were low at this time and a better assessment of the fishway could be done. The lower fishway had a large log lodged in it which was restricting flow through the fishway. This was removed with the aid of several large poles. The upper fishway was also in good condition. No major debris was found in upper fishway. An assessment of the fishway lower jump pools was made and it was determined that several inches could be taken off of the entrance of these pools to lower the jump height for fish.

Monitoring for 1996 should include a better assessment of the number of Sockeye Salmon using this fishway. Several monitoring methods would be needed to identify an escapement number. One method is with an intensive visual escapement survey in conjunction with a sonar counter. A second would entail a snorkel survey of spawning

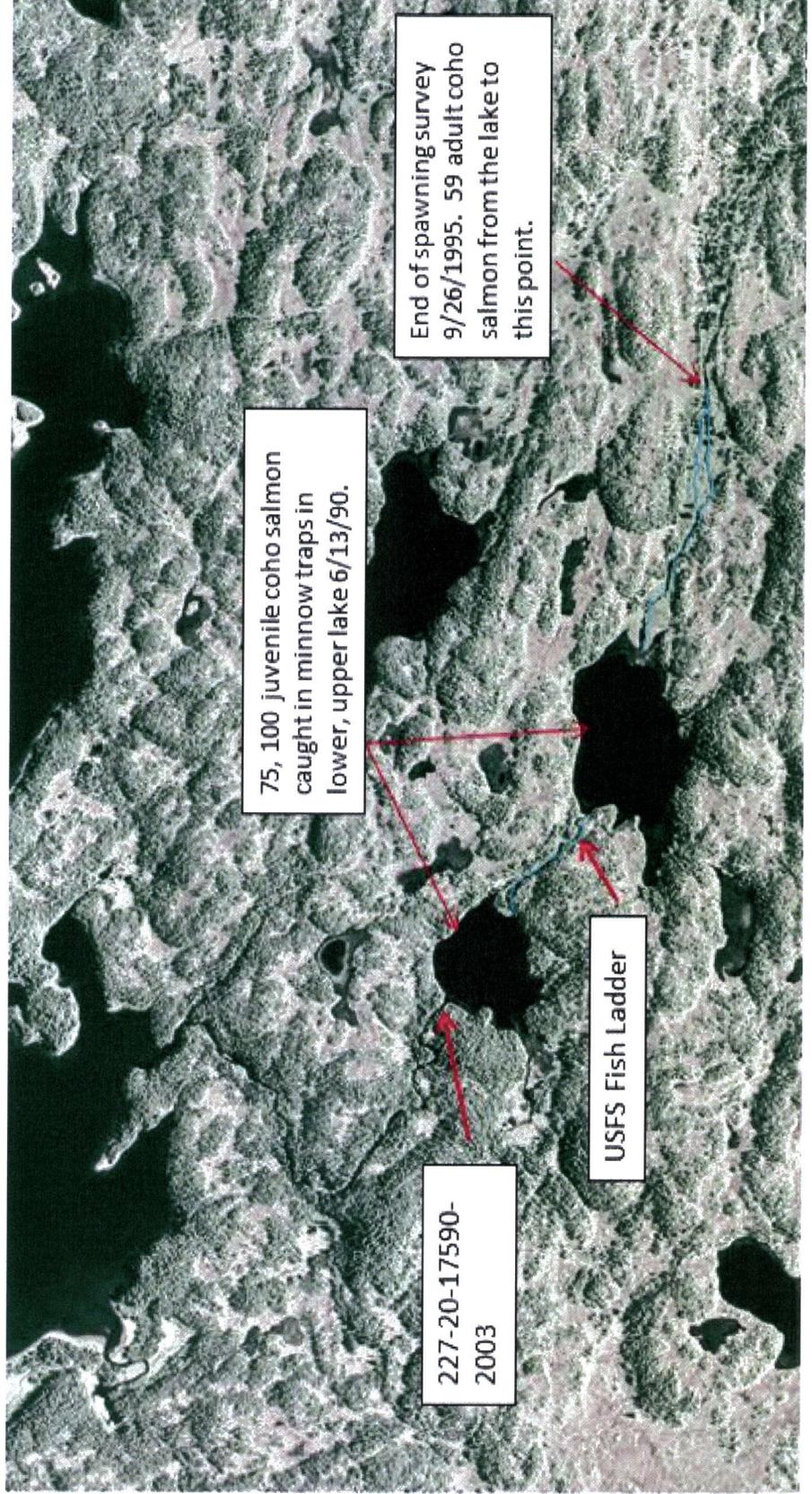
occurring along the lake shore itself. Further study will need to be done to determine the amount of time and expertise needed to access escapement numbers from snorkling along a lake shore. Monitoring for Coho Salmon will be done in 1996. In past years Coho Salmon have not been observed using the fishway. A monitoring study done in 1991 in which minnow traps were soked in the lake produced no Coho Salmon. Further monitoring could include minnow trapping for coho in the lake. If Coho are found in any significant numbers a fall escapement could be completed to determine numbers using the fishway.

Future construction: The fishway will continue to be closely monitored for any areas that are in need of repair. One area of concern is the two jump pools on the lower section of the upper fishway. The height of the jump pools could be lowered to facilitate better fish access. This could be done by removing six to twelve inches of concrete off the top of the jump pool walls. The specific technique could include drilling numerous holes with a hilty drill and then removing the amount off concrete one wanted to. The area drilled would have to be sealed with an epoxy grout to prevent water from getting down along side the rebar and freezing thus causing the concrete to crack. This process should take a couple days with two to three people.

The lower section of fishway also needs some improvements. The most important being replacement of wooden panels to prevent fish from being forced out the top of the fishway as water exits there. The structure and foundation seem to be in good condition. Previous concern had been the removal of gabion's protecting the fishway and placement of cement piers to hold the fishway in place. Future assessment of this section may need to be done to determine if the gabion's are causing any problems and if they were removed could the cement piers withhold a major flood event.



ADF&G Anadromous Waters Catalog Nomination
 Coho salmon spawning and rearing 227-20-17590-2003.
 Ken Hodges, Fisheries biologist
 USDA Forest Service, Cordova Ranger District
 9/12/2014



227-20-17590-2003

USFS Fish Ladder

75, 100 juvenile coho salmon caught in minnow traps in lower, upper lake 6/13/90.

End of spawning survey 9/26/1995. 59 adult coho salmon from the lake to this point.



extend 227-20-17590-2003 w/coho salmon present & rearing,
 add coho salmon present to 227-20-17590-2003 & 227-20-17590-2003-0010,
 add new lake 227-20-17590-2003-0020 w/coho salmon rearing & present
 use NHD flowline (yellow line) for hydro

CHp, COI, Pp

Pp

CHp, COI, Ps, Sr, CTP

COR, Ps, Sr, CTP

CHp, COI, Ps, Sr, CTP

COR, CTP

Pp

Pp

COR, Ps, Sr, CTP

COR, Sr, CTP

COPr

Pp

FISH PASS (FS)

FISH PASS (FS)

URV

UR

100

100

100

2A